

Figure 1 shows that the majority of thunderstorms occur during June; 94 out of a total of 290 storms recorded in the period 1923-35 occurred during that month. Thunderstorm frequency remains relatively high during the 6-hour period from 6 p. m. to midnight during July and August due to the high evening temperatures prevalent in those 2 months, whereas it falls off rapidly during June. In June, 42 thunderstorms, or 45 percent of the total recorded for that month, occurred between noon and 6 p. m., while for the period from 6 p. m. to midnight a decrease to 34, or 36 percent of the total, is shown.

In July and August, the 6-hour period 6 p. m. to midnight had a higher frequency than the noon to 6 p. m. period. The noon to 6 p. m. period for July had 33 percent of the total number of storms, while the 6 p. m. to midnight period had 36 percent. A greater divergence is noted for August, with the noon to 6 p. m. period having only 20 percent of the total and the 6 p. m. to midnight period 45 percent.

The graphs of the number of thunderstorms recorded for the entire period 1923-35 show for those occurring between noon and 6 p. m. nearly symmetrical ascent and descent on either side of a peak in June, and for those between 6 p. m. and midnight a relatively high peak maintained from June through August.

The 6-hour period from 6 p. m. to midnight shows the highest percentage of thunderstorms, with 37 percent of the total of 290 storms that were recorded; the noon-to-6 p. m. period is a close second, with 35 percent; and the two 6-hour periods from midnight to 6 a. m., and 6 a. m. to noon, show 10 percent each. The times of beginning of 8 percent of the thunderstorms are unknown.

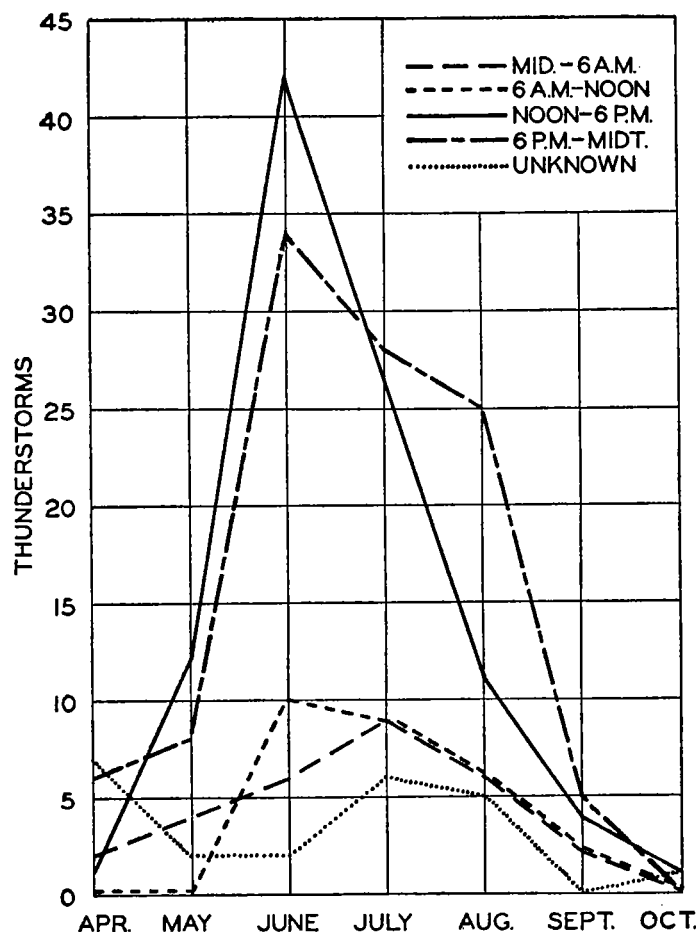


FIGURE 1.—Frequencies of thunderstorms recorded at Miles City, in 6-hour periods, 1923 to 1935, inclusive

BIBLIOGRAPHY

[RICHMOND T. ZOCH, in Charge of Library]

By AMY D. PUTNAM

RECENT ADDITIONS

The following have been selected from among the titles of books recently received as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies:

Bell, Eric Temple.

The handmaiden of the sciences. Baltimore. 1937. viii, 216 p. illus., diags. 22½ cm.

Brown, Earle Godfrey, & others.

Dust storms and their possible effect on health with special reference to the dust storms in Kansas in 1935. Wash., D. C. 1936. 15 p. maps, tables, plates. 23 cm. (At head of title: U. S. . . . Public health service.)

Church, Phil E.

Temperatures of the western North Atlantic from thermograph records. Liverpool. 1937. 32 p. figs., tabs. 25 cm. (At head of title: Assoc. d'océanographie physique. Publication scientifique no. 4.)

France. Office national météorologique et Société météorologique de France.

Bibliographie internationale de météorologie générale (nouvelle série). Tome I. Année 1933. Paris. 256 p. 27 cm.

Franssila, M.

Mikroklimatische Untersuchungen des Wärmehaushalts. Helsinki. 1936. 103 p. illus., tabs., diags. 24½ cm.

Granqvist, Gunnar.

Regular observations of temperature and salinity in the seas around Finland, July 1935-June 1936. Helsingfors. 1937. (At head of title: [Finland.] Havforskningsinstitutets skrift, N:o 109.)

International geodetic and geophysical union. Association of meteorology.

Réunion d'Édimbourg (16-26 septembre 1936). Rapport du bureau. Paris. 1936. 8 p. 24½ cm.

Association of physical oceanography.

Procès-verbaux No. 2. General assembly at Edinburgh, September 1936. Edinburgh. 1937. 164 p. 25 cm.

Section of terrestrial magnetism & electricity.

Transactions of Prague meeting, September 1927. Edited by C. Maurain. June 1929. Paris. 1929. 269 p. figs., maps, tabs. 25½ cm. (At head of title: Bulletin no. 7.)

International meteorological organization.

Procès-verbaux des séances du comité météorologique international à Locarno, Octobre 1931, et rapports de 3 commissions et d'une sous-commission à Innsbruck et Locarno, Septembre et Octobre 1931. Leyde. 1932. 385 p. illus., fold. maps (in pocket), tabs., diags. (part fold.) 24 cm. (No. 10.)

Commission de magnetisme terrestre et d'électricité atmosphérique.

Procès-verbaux de la réunion de Varsovie, 1-5 Septembre 1935. Leyde. 1936. 94 p. fold. map, tabs. 24 cm. (No. 30.)

Commission regionale II.

Preliminary report of the proceedings of the first conference in Hong Kong, January 13th to 21st, 1937. Hong Kong. 1937. 105 p. figs., tabs. 23 cm.

Secretariat. Aerological commission.

Leitfaden für die Wiedergabe der Ergebnisse aerologischer Beobachtungen an internationalen Tagen. Sur la publication des observations aérologiques aux jours internationaux. Neu arbeitet auf Grund der Friedrichshafener Beschlüsse der Kommission, von K. Keil. Leyde. 1936. 53 p. tabs. 24½ cm. (No. 28.)

Protokolle der Sitzungen in Warschau am 4. und 12. September 1935. Leyde. 1936. 53 p. figs., tabs. 24½ cm. (no. 27.)

Mann, Margaret.

Introduction to cataloging and the classification of books. Chicago. 1930. xv, 424 p. illus. 21½ cm.

Person, Harlow Stafford, & others.

Little waters, a study of headwater streams and other little waters, their use and relations to the land. Wash. 1936. 82 p. ill., maps, tab., front., plates, diagrs. 23 cm.

SOLAR OBSERVATIONS

SOLAR OBSERVATIONS DURING JUNE 1937

By IRVING F. HAND, Assistant in Solar Radiation Investigations

For a description of instruments employed and their exposures, the reader is referred to the January 1935 REVIEW, page 24.

Table 1 shows that solar radiation intensities averaged above normal for June at Washington and Lincoln, and close to normal at Madison.

Through the courtesy of Mr. Marion Eppley of the Eppley Laboratory, Newport, R. I., summaries of total solar and sky radiation received on a horizontal surface at Newport will be included in table 2 beginning with this issue. The instrumental equipment consists of an Eppley thermoelectric pyrheliometer recording on a Leeds and Northrup mixromax potentiometer. The coordinates of the station are as follows: Latitude, 41°30' N., longitude 71°19' W., and elevation of the pyrheliometer above sea level, 52 feet.

Table 2 shows an excess in the amount of total solar and sky radiation received on a horizontal surface at Madison, Lincoln, Chicago, New York, and Fresno, and a deficiency at all other stations.

Owing to an intensive program of calibration of a number of pyrheliometers during the month, no turbidity measurements were made.

Polarization observations made at Washington on 5 days give a mean of 57 percent with a maximum of 60 percent on the 24th. At Madison, observations made on 6 days give a mean of 52 percent with a maximum of 62 percent on the 30th. The values for Washington are close to normal, but those for Madison are considerably below the normal for June.

TABLE 1.—Solar radiation intensities during June 1937

[Gram-calories per minute per square centimeter of normal surface]

WASHINGTON, D. C.

Date	Sun's zenith distance										Local mean solar time	
	8 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°		
	75th mer. time	Air mass										
		A. M.					11.0	P. M.				
		e	5.0	4.0	3.0	2.0		2.0	3.0	4.0		5.0
June 7.....	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.	
June 12.....	15.65	0.71	.78	0.66	0.82	1.16	-----	-----	-----	-----	16.79	
June 22.....	12.24	-----	-----	.87	1.18	-----	-----	-----	-----	-----	7.87	
June 23.....	13.13	-----	-----	1.10	1.24	1.48	-----	-----	-----	-----	10.59	
June 24.....	9.14	-----	1.03	1.16	1.27	1.49	-----	-----	-----	-----	8.48	
June 24.....	12.22	-----	.58	1.00	1.26	1.45	-----	-----	-----	-----	9.83	
Means.....		(.71)	.72	.96	1.15	1.40	-----	-----	-----	-----		
Departures.....		+.16	+.04	+.17	+.20	+.15	-----	-----	-----	-----		

¹ Extrapolated.

TABLE 1.—Solar radiation intensities during June 1937—Contd

[Gram-calories per minute per square centimeter of normal surface]

MADISON, WIS.

Date	Sun's zenith distance										Noon		
	8 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°			
	75th mer. time	Air mass										Local mean solar time	
		A. M.					1.0	P. M.					
		e	5.0	4.0	3.0	2.0		2.0	3.0	4.0			5.0
mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.			
June 10.....	6.27					1.50	1.27		0.88	cal.	6.27		
June 11.....	7.04				1.22	1.32					6.50		
June 18.....	11.38		.60	.83	1.08	1.20					11.81		
June 22.....	11.38				1.20	1.49					11.81		
June 24.....	19.89			.84	1.03	1.32					21.28		
June 25.....	24.31		.56	.71	.80						23.52		
June 30.....	8.48		1.06	1.12	1.24	1.50					7.57		
Means.....			.74	.88	1.10	1.39	(1.27)		(.88)				
Departures.....			-.11	+.09	+.06	+.06							

LINCOLN, NEBR.

June 14.....	10.59						1.11	0.87	0.74	0.58	11.38
June 21.....	17.96			0.87	1.02	1.09	1.41	1.12	.96	.73	12.24
June 22.....	13.13	.75	.82	.93	1.18	1.39	1.03	.80	.63	.48	13.61
June 23.....	15.65	.73	.88	1.01	1.21	1.40	1.11	.91	.76	.63	10.97
June 24.....	14.60		.23	.32	.56						14.60
June 30.....	9.14						1.17	1.03	.90	.80	8.51
Means.....		(.74)	.70	.82	1.01	1.40	1.11	.91	.78	.64	
Departures.....		-.02	-.08	-.11	-.11	+.04	.00	-.01	-.01	-.03	

BLUE HILL, MASS.

June 4.....	11.1						1.20				9.8
June 6.....	11.1						1.32	0.94			11.6
June 7.....	16.4						1.07				16.6
June 9.....	11.9					0.98	1.20				11.8
June 12.....	10.3			0.83	1.08	1.34	1.24				8.8
June 13.....	9.2				1.05	1.18	1.03	1.09			7.7
June 15.....	12.8				.81	1.15					14.1
June 16.....	9.9				1.10	1.23					8.0
June 17.....	10.7					1.27	1.01				12.8
June 20.....	10.7					1.30					12.1
June 23.....	9.9					1.36	1.06				7.8
June 24.....	8.8			.94	1.16	1.43	1.19	1.03	0.89		8.5
June 25.....	10.3					1.37					9.5
June 29.....	11.9					1.05	1.07				11.6
Means.....				(0.88)	1.03	1.25	1.08	(1.06)	(.89)		
Departures.....				-.12	-.04	-.03	.00	+.03	-.01		